

What is claimed is:

1. A method for forming a liquid crystal polycarbonate comprising the steps of: forming a reaction mixture comprising
  - (a) an activated diaryl carbonate; and
  - (b) at least two species of aromatic diol monomers selected from the group consisting of resorcinol, 4,4'-biphenol, hydroquinone, methylhydroquinone, 4,4'-dihydroxyphenylether, dihydroxynaphthalene, 4,4'-dihydroxybenzophenone and 2,6-dihydroxyanthraquinone; andprocessing the reaction mixture in a melt transesterification reaction to form a liquid crystal polycarbonate.
2. The method of claim 1, wherein the activated diaryl carbonate is a diester carbonate.
3. The method of claim 2, wherein the activated diaryl carbonate is selected from the group consisting of bis(methylsalicyl)carbonate, bis(ethyl salicyl)carbonate, bis(propyl salicyl) carbonate, bis(butylsalicyl) carbonate, bis(benzyl salicyl)carbonate, and bis(methyl 4-chlorosalicyl)carbonate.
4. The method of claim 2, wherein the activated diaryl carbonate is bis(methylsalicyl)carbonate.
5. The method of claim 4, wherein the catalyst comprises (a) at least one source of alkaline earth ions or alkali metal ions, (b) at least one quaternary ammonium compound or quaternary phosphonium compound or a mixture thereof; or (c) a mixture of (a) and (b).

6. The method of claim 2, wherein the catalyst comprises (a) at least one source of alkaline earth ions or alkali metal ions, (b) at least one quaternary ammonium compound or quaternary phosphonium compound or a mixture thereof; or (c) a mixture of (a) and (b).

7. The method of claim 1, wherein the reaction mixture contains only two species of aromatic diol

8. The method of claim 7, wherein neither species of aromatic diol makes up more than 80 mole % of the monomers in the reaction mixture.

9. The method of claim 8, wherein the activated diaryl carbonate is a diester carbonate.

10. The method of claim 9, wherein the activated diaryl carbonate is selected from the group consisting of bis(methylsalicyl)carbonate, bis(ethyl salicyl)carbonate, bis(propyl salicyl) carbonate, bis(butylsalicyl) carbonate, bis(benzyl salicyl)carbonate, and bis(methyl 4-chlorosalicyl)carbonate.

11. The method of claim 9, wherein the activated diaryl carbonate is bis(methylsalicyl)carbonate.

12. The method of claim 11, wherein the catalyst comprises (a) at least one source of alkaline earth ions or alkali metal ions, (b) at least one quaternary ammonium compound or quaternary phosphonium compound or a mixture thereof; or (c) a mixture of (a) and (b).

13. The method of claim 9, wherein the catalyst comprises (a) at least one source of alkaline earth ions or alkali metal ions, (b) at least one quaternary ammonium compound or quaternary phosphonium compound or a mixture thereof; or (c) a mixture of (a) and (b).

14. The method of claim 1, wherein no species of aromatic diol makes up more than 80 mole % of the monomers in the reaction mixture.

15. A liquid crystal polycarbonate composition comprising:  
residues of at least two species of aromatic diols selected from the group consisting of resorcinol, 4,4'-biphenol, hydroquinone, methylhydroquinone, 4,4'-dihydroxyphenylether, dihydroxynaphthalene, 4,4'-dihydroxybenzophenone and 2,6-dihydroxyanthraquinone; and structural units indicative of an activated diaryl carbonate.

16. The composition of claim 15, wherein the activated diaryl carbonate is a diester carbonate.

17. The composition of claim 16, wherein the activated diaryl carbonate is selected from the group consisting of bis(methylsalicyl)carbonate, bis(ethyl salicyl)carbonate, bis(propyl salicyl) carbonate, bis(butylsalicyl) carbonate, bis(benzyl salicyl)carbonate, and bis(methyl 4-chlorosalicyl)carbonate.

18. The composition of claim 16, wherein the activated diaryl carbonate is bis(methylsalicyl)carbonate.

19. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of resorcinol and 4,4'-biphenol.

20. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of resorcinol and hydroquinone.
21. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of resorcinol and methylhydroquinone.
22. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of resorcinol and 4,4'-dihydroxyphenylether.
23. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol and hydroquinone.
24. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol and methylhydroquinone
25. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol and 4,4'-dihydroxyphenylether.
26. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of hydroquinone and 4,4'-dihydroxyphenylether.
27. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol, hydroquinone and 4,4'-dihydroxyphenylether.
28. The composition of claim 18, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol, hydroquinone and methylhydroquinone.

29. The composition of claim 18, wherein the residues of the aromatic diols comprise 4,4'-biphenol, hydroquinone and resorcinol.

30. The composition of claim 18, wherein the residues of the aromatic diols comprise 4,4'-biphenol, hydroquinone and bisphenol A.

31. A method for making a molded article comprising the steps of:

(a) melting a liquid crystal polycarbonate comprising:

residues of at least two species of aromatic diols selected from the group consisting of resorcinol, 4,4'-biphenol, hydroquinone, methylhydroquinone, 4,4'-dihydroxyphenylether, dihydroxynaphthalene, 4,4'-dihydroxybenzophenone and 2,6-dihydroxyanthraquinone; and

residues derived from an activated diaryl carbonate.

(b) introducing the melted liquid crystal polycarbonate into a mold defining the shape of the article; and

(c) allowing the melted liquid crystal polycarbonate to solidify in the mold to form the molded article.

32. The method of claim 31, wherein the activated diaryl carbonate is a diester carbonate.

33. The method of claim 32, wherein the activated diaryl carbonate is selected from the group consisting of bis(methylsalicyl)carbonate, bis(ethyl salicyl)carbonate, bis(propyl salicyl) carbonate, bis(butylsalicyl) carbonate, bis(benzyl salicyl)carbonate, and bis(methyl 4-chlorosalicyl)carbonate.

34. The method of claim 32, wherein the activated diaryl carbonate is bis(methylsalicyl)carbonate.
35. The method of claim 34, wherein the residues of the aromatic diols comprise residues of resorcinol and 4,4'-biphenol.
36. The method of claim 34, wherein the residues of the aromatic diols comprise residues of resorcinol and hydroquinone.
37. The method of claim 34, wherein the residues of the aromatic diols comprise residues of resorcinol and methylhydroquinone.
38. The method of claim 34, wherein the residues of the aromatic diols comprise residues of resorcinol and 4,4'-dihydroxyphenylether.
39. The method of claim 34, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol and hydroquinone.
40. The method of claim 34, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol and methylhydroquinone
41. The method of claim 34, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol and 4,4'-dihydroxyphenylether.
42. The method of claim 34, wherein the residues of the aromatic diols comprise residues of hydroquinone and 4,4'-dihydroxyphenylether.

43. The method of claim 34, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol, hydroquinone and 4,4'-dihydroxyphenylether.

44. The method of claim 34, wherein the residues of the aromatic diols comprise residues of 4,4'-biphenol, hydroquinone and methylhydroquinone.

45. The method of claim 34, wherein the residues of the aromatic diols comprise 4,4'-biphenol, hydroquinone and resorcinol.

46. The method of claim 36, wherein the residues of the aromatic diols comprise 4,4'-biphenol, hydroquinone and bisphenol A.

47. The method of claim 31, wherein a filler is introduced into the mold with the melted liquid crystal polycarbonate.

48. A molded article formed by the method of claim 31.

49. A molded article comprising a liquid crystal polycarbonate, said liquid crystal polycarbonate comprising:

residues of at least two species of aromatic diols selected from the group consisting of resorcinol, 4,4'-biphenol, hydroquinone, methylhydroquinone, 4,4'-dihydroxyphenylether, dihydroxynaphthalene, 4,4'-dihydroxybenzophenone and 2,6-dihydroxyanthraquinone; and

residues derived from an activated diaryl carbonate.